AMENDMENTS TO THE CLAIMS

LISTING OF CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1.   (Original) An isolated peptide comprising the amino acid sequence QA(Q/E)GQLV or functional equivalents thereof, wherein said peptide selectively homes to TNF receptor(s) of the vasculature of a heart.

2.-17. Cancel

18.   (Original) An isolated peptide comprising the amino acid sequence ARRGQAV or functionally equivalent thereof, wherein said peptide preferentially homes to BDNF receptor(s) of the vasculature of a heart.

19.-32. Cancel

33.   (Original) An isolated peptide comprising the amino acid sequence G(R/W)RFIRV or functional equivalent thereof, wherein said peptide preferentially homes to BDNF receptor(s) of the vasculature of a heart.

34.-51. Cancel

52.   (Original) A conjugate comprising a peptide according to claim 1 and a functional moiety, wherein said peptide selectively homes to TNF receptor(s) in the vasculature of a heart.

53.-65. Cancel

66.   (Original) A conjugate comprising a peptide according to claim 18 and a functional
       moiety, wherein said peptide preferentially homes to BDNF receptor(s) of the
       vasculature of a heart.

67.-74. Cancel

75.   (Original) A conjugate comprising a peptide according to claim 33 and a functional
       moiety, wherein said peptide preferentially homes to BDNF receptor(s) of the
       vasculature of a heart.

76.-85. Cancel

86.   (Original) A method for determining a young heart or young areas of a heart
       vasculature in a mammal comprising:
       a)   administering a peptide comprising the amino acid sequence QA(Q/E)GQLV
             or functionally equivalent modifications thereof, conjugated to a detectable
             marker, wherein said first peptide selectively homes to TNF receptor(s) in a
             vasculature of the heart; and
       b)   detecting the marker;
       wherein a disproportionately high binding of QA(Q/E)GQLV is a young heart or
       young areas of a heart vasculature.

87.-91. Cancel

92   (Original) A method for determining an old heart or old areas of a heart vasculature in
       a mammal comprising:
       a)   administering a peptide comprising the amino acid sequence ARRGQAV or
             G(R/W)RFIRV or functionally equivalent modifications thereof, conjugated to
             a detectable marker, wherein said first peptide selectively homes to BDNF
             receptor(s) in a vasculature of the heart; and
       b)   detecting the marker;

4

wherein a disproportionately high binding of ARRGQAV or G(R/W)RFIRV is an old heart or old areas of a heart vasculature.

93.-101. Cancel

102.   (Original) A method for determining the condition of a vasculature of a heart in a mammal comprising:

a)   administering a first peptide comprising the amino acid sequence QA(Q/E)GQLV or functionally equivalent modifications thereof, conjugated to a first detectable marker, wherein said first peptide selectively homes to TNF receptor(s) in the vasculature of the heart;

b)   administering a second peptide comprising the amino acid sequence ARRGQAV or G(R/W)RFIRV or functionally equivalent modifications thereof, conjugated to a second detectable marker, wherein said second peptide homes to BDNF receptor(s) in the vasculature of the heart; and

c)   detecting the first and second marker;

wherein a disproportionately high ratio of binding of the first peptide to the second peptide indicates a young heart or young areas of the heart vasculature or wherein a disproportionately low ratio of binding of the first peptide to the second peptide indicates an old heart or old areas of the heart vasculature.

103.-115. Cancel

116.   (Currently Amended) A method for delivering a functional moiety to a young heart vasculature in a mammal, the method comprising administering a conjugate of claim 48 52.

117.-126. Cancel

5

127.   (Currently Amended) A method for delivering a functional moiety to a old heart vasculature in a mammal, the method comprising administering a conjugate of claim 66 ~~or claim 75~~.

128.-138 Cancel

139.   (Original) A method for discovering mimics of amino acid sequence QA(Q/E)GQLV or functionally equivalent modifications thereof, comprising:

    a)   determining a three-dimensional structure of said sequence;

    b)   identifying compounds comprising said structure; and

    c)   determining the capacity of said compounds for selective homing to TNF receptor(s) in a heart vasculature of a mammal;

wherein compounds which selectively home to TNF receptor(s) in the vasculature of the heart are mimics.

140.-146. Cancel

147.   (Original) A method for discovering mimics of amino acid sequence ARRGQAV or G(R/W)RFIRV or functionally equivalent modifications thereof, comprising:

    a)   determining a three-dimensional structure of said sequence;

    b)   identifying compounds comprising said structure; and

    c)   determining the capacity of said compounds for homing to BDNF receptor(s) in a heart vasculature of a mammal;

wherein compounds which home to BDNF receptor(s) in the vasculature of the heart are a mimics.

148.-156 Cancel

157.   (New) A method for delivering a functional moiety to a old heart vasculature in a mammal, the method comprising administering a conjugate of claim 75.